

***Introduction: Protection of Underwater Cultural Heritage in International Waters adjacent to the UK – a JNAPC perspective 21 years on*** - Robert Yorke

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Following a fractious and very public exchange of letters in 1988 in the columns of the Times between the Nautical Archaeology Society, of which I was then chairman, and Richard Ormond, director of the National Maritime Museum, in which I berated him about the Museum's closure of its Archaeological Research Centre, we met for tea, in a typically civilised British way, and decided to work together to develop a coherent policy to protect the UK's underwater cultural heritage. And so the JNAPC was borne.

In May 1989, the JNAPC launched its classic document *Heritage at Sea*<sup>1</sup> that put forward proposals for the better protection of archaeological sites underwater. Its recommendations included the following ten items:

- New legislation should be enacted to protect underwater sites and historic wrecks should be taken out of the commercial salvage regime.
- An inventory of underwater sites within territorial waters should be compiled.
- Official fees imposed by the Receiver of Wreck should be waived.
- Commercial seabed developers should be encouraged to undertake pre-disturbance surveys.
- MoD and FCO should take greater responsibility for their historic wrecks (warships and East Indiamen respectively) or transfer them to a Government Department with a cultural interest.
- Management of maritime sites should come under the same agencies as those that protect land sites, such as the Heritage Agencies.
- A government department with cultural interests should oversee the management of underwater sites rather than the Department of Transport.
- There should be strengthened reporting of finds via the Receiver of Wreck.
- There should be an integrated national collections policy and regional conservation and storage centres for maritime finds.
- There should be funding for training of sports divers to encourage respect for the maritime historic environment.

Government subsequently published a White Paper, *This Common Inheritance* (December 1990) in which it announced that:

- The Receiver's fees would be waived.
- The Royal Commission on the Historical Monuments of England would be funded to prepare a Maritime Record of sites.
- Funding would be made available for the Nautical Archaeology Society to employ a full time training officer to develop its training programmes.
- Responsibility for the administration of the 1973 Protection of Wrecks Act would be transferred from the Department of Transport, where it sat rather uncomfortably, to the then heritage ministry, the Department of the Environment. Subsequent responsibility passed to the Department of National Heritage, which has since become the Department for Culture, Media, and Sport.

That was four out of ten, not a pass mark, but a significant and a welcome beginning. Underwater, or nautical archaeology as it was then called, had pinned its colours to the mast. Since then many

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<sup>1</sup> For this and all other JNAPC publications cited below visit <http://www.jnapc.org.uk/publications.htm>

of the other objectives have also been achieved, including the transfer of management responsibility to English Heritage.

Three years then passed without much further movement from government and so we launched some new initiatives:

- *Still at Sea* – an update of *Heritage at Sea* drawing Government's attention to outstanding issues – was published in 1993.
- *The Code of Practice for Seabed Developers* – targeting commercial development – was launched in 1995.
- *Underwater Finds - What to Do* – an archaeological leaflet for divers – was published in 1998 in collaboration with the Sports Diving Associations: the British Sub Aqua Club, the Professional Association of Diving Instructors and the Sub Aqua Association – and it is worth emphasizing here how important the diving organisations have been in helping JNAPC to achieve its objectives.
- *Underwater Finds - Guidance for Divers* – a definitive assessment of the legal position in relation to wrecks and diving – was produced in 2000 and re-published in 2007. *Wreck Diving – Don't Get Scuttled* – a further educational brochure for divers – was published in 2000 in collaboration again with BSAC, PADI and SAA.

Our attention then turned to the lack of proper legislation for the protection of underwater cultural heritage within territorial waters and how this could, and should, be improved:

- *Heritage Law at Sea* reviewed the problems with the current legislation in 2000.
- *An Interim Report on The Valletta Convention & Heritage Law at Sea* made detailed recommendations for legal and administrative changes to improve protection of the UK's underwater cultural heritage in 2003.
- In 2003 acting on behalf of English Heritage, JNAPC undertook a major review of marine archaeological legislation.
- JNAPC worked closely with DCMS in drafting *Protecting our Marine Historic Environment: Making the System Work Better*, published in 2004.
- In 2006, JNAPC was a member of the DCMS Salvage Working Group prior to the launch of the Government's *Heritage Protection Bill*.
- In 2006, jointly with the Crown Estate, we published the completely revised current version of the *The Code of Practice for Seabed Development*.

Unfortunately the *Heritage Protection Bill* was not enacted but even if it had been it would not have brought great improvement to the protection of marine historic sites, or historic assets to give them their current terminology, because the Bill failed to address the fundamental issues of 'Salvage' and 'Reporting of finds'. Although this was a missed opportunity, it does leave the Government free to take a more considered look at the protection of underwater cultural heritage in the future.

The emphasis of JNAPC's work so far had been on legislation within UK territorial waters over which the UK Government has sovereignty and jurisdiction to control activities directed at underwater cultural heritage. But a question of growing importance in recent years is how can the Government – and others – protect underwater cultural heritage that lies in international waters beyond the 12 nautical mile territorial limit, where it does not have sovereignty and jurisdiction?

And that is the subject of the papers presented below, where the focus of attention is the UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001 (hereafter the Convention). The papers will review the Convention in more detail but the general principles in the Annex to the Convention state in Rules 1 and 2:

*1 The protection of underwater cultural heritage through in situ preservation shall be considered as the first option.*

*2 The commercial exploitation of underwater cultural heritage for trade or speculation or its irretrievable dispersal is fundamentally incompatible with the protection and proper management of underwater cultural heritage. Underwater cultural heritage shall not be traded, sold, bought or bartered as commercial goods.*

In 2001 the incumbent UK Government abstained from voting for the Convention when it was adopted in Paris and after that it showed little appetite to undertake the important step of ratification. In the meantime, the Convention came into force in January 2009 with 20 members and since then the number of countries has risen to 38<sup>2</sup>.

We warmly welcome the Government's formal adoption of the Rules of the Annex to the Convention as a matter of policy since 2005<sup>3</sup>. It is gradually emerging how this applies across all Government departments, but for example it is firmly part of the best practice principles applied to managing wrecks in UK territorial waters designated under the Protection of Wrecks Act 1973. Also, in its recent Consultation on HMS Victory, sunk in the Channel in 1744, the Government made it a requirement that any future management of the wreck should to be in accordance with the Annex. Here we have the Annex being applied outside territorial waters. Both these are important steps forward.

As a major seafaring nation for hundreds of years, Britain has a legacy of sunken naval and merchant vessels lying on seabeds throughout the world. Until now the enormous water depths and the limitations of technology have been the great protectors of these historic wreck sites. However, the recent advances in diving technology, underwater survey techniques, positioning systems and remote excavation have effectively stripped away this protection.

Technical divers now have the capability to reach depths unimaginable ten years ago, when the Convention was adopted, to collect souvenirs from wrecks on the Continental Shelf. Commercial salvage companies are currently targeting 'high value' historic wrecks in international waters adjacent to the UK. Given the chance, they could salvage the wrecks, winch the artefacts to the surface and auction them off for profit. As well as losing vital archaeological information we do not know what collateral damage will also be done to these historic sites in the process – or what longer term effects, such as hastening processes of natural erosion, such disturbance may trigger.

Most of these wrecks lie in deep water and excavation techniques at depth using remote operated vehicles (ROVs) are still in their infancy despite the claims of the salvors. The painstaking archaeological excavation of the Mary Rose took over 22,000 man-hours, which is the equivalent of more than 2.5 years working full time underwater. Using a ship borne ROV the cost to the salvor would be many tens of millions of pounds and along with the extended timescale would be quite incompatible with the financial imperatives of a commercial salvage company.

There is only one opportunity to gather the unique evidence of our past from these 'time-capsules' of history and this should not be squandered for short-term financial gain or personal gratification. Beyond territorial waters there is very little that the UK Government can do to protect these historic wreck sites unless they are naval warships, such as HMS Victory. Fortunately, as warships, these are classed as sovereign immune vessels and may only be salvaged with the Government's permission.

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<sup>2</sup> The full text of the UNESCO Convention for the Protection of the Underwater Cultural Heritage can be found at [http://www.unesco.org/culture/laws/underwater/html\\_eng/convention.shtml](http://www.unesco.org/culture/laws/underwater/html_eng/convention.shtml)

<sup>3</sup> Hansard, House of Commons, Written Answers for 24 January 2005, Col. 46W

However for the thousands of wrecks of historic merchant vessels carrying valuable cargoes to and from these shores there is little or no protection and it is open season for treasure hunters. For instance, if the English vessel, *Merchant Royall*, which sank in 1641 forty miles off Lands End and was reported to have been carrying silver and gold to a value of hundreds of millions of pounds sterling at today's values, were to be located, the Government would have no legal means to prevent her being salvaged. The wreck could be pillaged just off our coast and we might have to stand by helplessly as cultural heritage with which we have close links was auctioned off around the world.

Fortunately, there is a ready-made solution. The Government could ratify the UNESCO Convention on the Protection of the Underwater Cultural Heritage.

## ***An outline of the nature of the threat to Underwater Cultural Heritage in International Waters*** - David Parham<sup>1</sup> and Michael Williams<sup>2</sup>

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The threat to Underwater Cultural Heritage<sup>3</sup> is manifold. Natural erosion, of wrecks and seabed, trawling, construction of offshore installations and pipes and cables, all pose threats of varying intensity. However, within the last three decades a principal threat has emerged with the radical evolution of deep water technology, both in terms of remote controlled underwater vehicles<sup>4</sup> and mixed gas diving technology<sup>5</sup>. Both these capabilities have undergone a rapid evolution since the 1980's and now permit commercial organisations and recreational divers not only to access depths previously inaccessible but to conduct recovery operations at these depths. Married with a quantum leap in remote sensing capabilities<sup>6</sup>, using technologies developed for the offshore oil and gas industry, a point has now been reached where conceivably any UCH, previously protected by depth of water, undetectable and inaccessible, can be both located and accessed. Inevitably this has led to the exploitation of such UCH, both for commercial purposes and for personal souvenir collection. This commonly takes the form of unsystematic, unrecorded excavation and recovery, often under the salvage regime, resulting in the loss of important contextual knowledge and the deposition of artefacts in private ownership, where they are not appropriately conserved, archived nor accessible to researchers or the public. Such has been the rapid pace of this technological evolution that the existing regulatory structure protecting UCH located beyond territorial waters has proved woefully inadequate, especially in comparison to the more comprehensive regulatory provisions customarily put in place in territorial waters by coastal States.

In order to comprehend the threat to UCH located beyond territorial waters, which the UNESCO Convention on the Protection of Underwater Cultural Heritage<sup>7</sup> seeks to address, it is necessary to examine in outline the nature of the threat posed by these technology driven activities directed at such UCH and the regulatory lacuna that has been exposed. This lacuna has two principal causes. Firstly, the international jurisdictional framework laboriously negotiated in the early 1980's in respect of coastal and offshore waters and secondly, the limitations of underwater technology extant at that time, which rendered UCH in deeper waters inaccessible<sup>8</sup>. Both these factors are interrelated and have combined to create this regulatory omission<sup>9</sup>.

### **The International Maritime Jurisdictional Framework**

The jurisdictional maritime framework recognised by most States was established in 1982 by the United Nations Law of the Sea Convention<sup>10</sup>. This established a number of maritime zones of

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<sup>3</sup> Hereafter 'UCH'.

<sup>4</sup> Commonly referred to Remotely Controlled Vehicles ('ROV's').

<sup>5</sup> Commonly referred to as 'technical diving'.

<sup>6</sup> Using side scan sonars, sub-bottom profiling and magnetometry.

<sup>7</sup> Hereafter 'the UNESCO Convention'.

<sup>8</sup> This in itself was considered to afford adequate protection to such UCH.

<sup>9</sup> For a discussion of the provisions of the UNESCO Convention see O'Keefe, P *'Shipwrecked Heritage: A Commentary on the UNESCO Convention on Underwater Cultural Heritage'* (2002) Leicester.

<sup>10</sup> Commonly referred to as 'LOSC' or 'UNCLOS' and hereafter 'UNCLOS'.

prescribed extent, ranging seaward from the coastal baselines<sup>11</sup> of a State. Within each zone the jurisdictional capabilities of a coastal State were prescribed, the extent of such rights diminishing with distance from the coastal State's baseline. Although not all States are party to UNCLOS, most States abide by its provisions and to that extent the Convention could now possibly be said to reflect customary international law. Under UNCLOS the following maritime jurisdictional zones were delineated:

- a Territorial Water of up to 12 nautical miles<sup>12</sup> from the baseline<sup>13</sup>;
- a Contiguous Zone (CZ)<sup>14</sup>, extending from the seaward boundary of Territorial Waters out a further 12 nautical miles from the baseline (i.e. commencing 12 nautical miles from the baseline and terminating 24 nautical miles from that baseline)<sup>15</sup>.
- an Exclusive Economic Zone (EEZ)<sup>16</sup>, extending 200 nautical miles from the baseline<sup>17</sup>;
- a Continental Shelf (CS)<sup>18</sup>, extending 200 nautical miles from the baseline<sup>19</sup>, or, where the CS physically exceeds 200 nautical miles, to the boundary with the continental margin, i.e. the boundary with the deep sea bed.

### **Territorial Waters**

Within territorial waters a coastal State enjoys criminal and civil jurisdiction, comparable to that exercised on its land<sup>20</sup>. Such jurisdiction is fettered only by the rights granted to foreign flagged vessels by international Conventions or customary international law, such as that of innocent passage<sup>21</sup>. Consequently, a State may make such provision as it wishes for protection of UCH within its territorial waters and in the United Kingdom<sup>22</sup> protection is afforded to UCH by the following Acts:

- Protection of Wrecks Act 1973
- Ancient Monuments & Archaeological Areas Act 1979
- Protection of Military Remains Act 1986

Other than to note the existence and nature of such controls, the issue of jurisdiction within territorial waters is not germane to our present discussion.

### **Contiguous Zone**

This zone extends 12 nautical miles from the limit of territorial waters<sup>23</sup> seaward out to 24 nautical miles from a State's baseline<sup>24</sup>. The existence of such a zone is not automatic. A coastal State must

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<sup>11</sup> Many coastal States have an indented coastline. To avoid such irregularities in the border of such zones, as measured from a State's coast, each coastal State may establish a series of baselines, which have the effect of straightening out its coastline for the purpose of calculating distance off its coast.

<sup>12</sup> A nautical mile, customarily used in maritime navigation, is 2,000 imperial yards.

<sup>13</sup> Articles 3, 4 & 5 UNCLOS

<sup>14</sup> Hereafter 'CZ'.

<sup>15</sup> Article 33 UNCLOS

<sup>16</sup> Hereafter 'EEZ'.

<sup>17</sup> Article 57 UNCLOS

<sup>18</sup> Hereafter 'CS'.

<sup>19</sup> Article 76 UNCLOS

<sup>20</sup> Articles 27 & 28 *ibid.*

<sup>21</sup> Article 17 *op. cit.*

<sup>22</sup> Hereafter 'the UK'.

<sup>23</sup> i.e. 12nm from a coastal State's baseline.

<sup>24</sup> Article 33 UNCLOS

declare a CZ and to-date the UK has not done so, although the possibility of such a zone being declared by the UK in the near future is understood to be under review. Within a CZ a coastal State has rather limited rights in comparison to those within its territorial waters. These rights allow it to exercise control to prevent infringement of its customs, fiscal, immigration and sanitary controls<sup>25</sup>. The CZ in effect acts as a 'buffer' zone, allowing coastal States some increased geographical distance to prevent infringements of these specified matters within its territorial jurisdiction. However, there is also a measure of protection for UCH within this CZ. Under Article 303(2)<sup>26</sup>, in order to control traffic in objects of an archaeological and historical nature, a coastal State may presume that removal of UCH from the seabed within the CZ infringes such customs, fiscal, immigration and sanitary controls. This is a 'legal fiction', i.e. an artificial device which allows a measure of control by a coastal State over removal of UCH from the seabed within the CZ. As such it is perhaps an unnecessarily clumsy device, which raises some uncertainties as to its correct interpretation and scope<sup>27</sup>, but it does confer in respect of UCH a degree of extended jurisdiction upon a coastal State beyond the limit of its territorial waters<sup>28</sup>. It is also important to note that the provision is only applicable to removal of objects from the seabed within the CZ. Surveying of, diving upon, recording of and even the damaging of UCH would not be covered by the provision, so long as no removal was undertaken.

### **Exclusive Economic Zone**

This extends 200 nautical miles from a coastal State's baselines<sup>29</sup> and gives a State Sovereign Rights in the water column and the seabed, but only for the purposes of exploring and exploiting *natural* resources<sup>30</sup>. Natural resources do not encompass cultural resources, so a coastal State may not impose controls upon activities directed at UCH per se within an EEZ. It is possible that indirect controls may be imposed over UCH, as disturbance of the seabed or UCH may adversely impact upon marine flora and fauna. However such impacts are difficult to establish and can be de minimis. Consequently, such indirect regulation is rarely an effective regulatory mechanism for UCH.

### **Continental Shelf**

The CS encompasses the shelf, its slope and rise but excludes the deep oceanic floor<sup>31</sup>. Under UNCLOS it is deemed to extend for a minimum distance of 200 nautical miles from a coastal State's baselines<sup>32</sup>. This is intended to compensate those coastal States which possess a narrow continental shelf. However, if a coastal State's continental shelf physically extends beyond 200 nautical miles then under UNCLOS specific rules provide for calculating its actual width. Upon the Continental Shelf a coastal State has Sovereign Rights in the seabed but only for the purpose of exploring for and exploiting the *natural* resources of the seabed<sup>33</sup>. To the extent that the EEZ and the CS coincide (i.e. for 200 nautical miles) then the jurisdiction over the EEZ and the CS is co-existent, but the CS may

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<sup>25</sup> Article 33 UNCLOS.

<sup>26</sup> UNCLOS

<sup>27</sup> For a discussion of these uncertainties see Forrest, C ' *International Law and the Protection of Cultural Heritage*' (2010) Abingdon pp323-329; O'Keefe op. cit. pp 18-19.

<sup>28</sup> For a discussion of the use of Article 303(2) see Dromgoole, S *International Law and the Underwater Cultural Heritage*, Cambridge University Press, forthcoming, Chap 7, Section 3.3.

<sup>29</sup> Article 57

<sup>30</sup> Article 56 UNCLOS. This includes minerals as well as biological life forms.

<sup>31</sup> O'Keefe op. cit. pp 3-4.

<sup>32</sup> Article 76 UNCLOS

<sup>33</sup> Article 77 *ibid*.

physically extend beyond 200 nautical miles. As with the EEZ, no direct regulation of activities directed at UCH on the CS is possible, although indirect regulation due to adverse impact upon marine flora and fauna is theoretically possible.

### **A Regulatory Overview**

The consequence of this jurisdictional framework adopted by UNCLOS and mirrored in customary international law has left a significant jurisdictional lacuna for directly regulating activities directed at UCH. Within their territorial waters coastal States have full jurisdiction over activities directed at UCH. Beyond that, for a further 12 nautical miles, provided they declare a CZ, coastal States have a degree of jurisdiction over UCH, limited to regulating removal of UCH from the seabed. Beyond 24 nautical miles, within the EEZ and upon the CS, no regulation of activities directed at UCH is possible, save for two circumstances. The first is the theoretical possibility of indirect regulation due to adverse impact upon marine flora and fauna. The second is the application of Sovereign Immunity<sup>34</sup>.

Customary international law has long afforded certain immunities to sovereign vessels i.e. vessels owned or operated by a State for non-commercial purposes<sup>35</sup>. The applicability of the Doctrine of Sovereign Immunity to such vessels has been recognised by international Conventions, e.g. the immunities from arrest or detention granted to warships by UNCLOS<sup>36</sup>, or the immunity from salvage without the consent of the Flag State afforded to such vessels by the International Convention on Salvage 1989<sup>37</sup>. Some States, especially those which have been termed the 'western maritime States', contend that this immunity prohibits interference with Sovereign Immune vessels that have been sunk, irrespective of the lapse of time since the sinking. The UK and the United States of America have been strong advocates of this interpretation of the Doctrine and have used it to secure protection from interference with wrecks of their State vessels globally, some of which constitute UCH. Where the neighbouring coastal State shares this interpretation of Sovereign Immunity such protection has been effective<sup>38</sup>. However, not all jurists or States accept that the Doctrine applies to a wrecked vessel (as opposed to a functioning one) or possibly to a vessel that has been submerged for a considerable number of years<sup>39</sup>.

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<sup>34</sup> Sovereign Immunity will also potentially apply within Territorial Waters and the CZ but see further the caveats discussed post.

<sup>35</sup> The most cited example being a warship but any State owned or operated vessels used for non-commercial purposes could potentially qualify.

<sup>36</sup> Articles 95 & 96

<sup>37</sup> Article 4(1); see also Article 14 Convention for the Unification of Certain Rules of Law Relating to Assistance and Salvage at Sea 1910.

<sup>38</sup> For example, the UK has invoked the Doctrine to prevent interference with the wrecks of *HMS Prince of Wales* and *HMS Repulse* (sunk in 1942 in international waters off Malaysia) and of Second World War aircraft lost in the internal waters of the United States of America. The UK has also invoked the Doctrine to require consent for the recovery of artefacts from *HMS Victory*, sunk in 1744 on the UK's CS.

<sup>39</sup> For a discussion of this issue see further Forrest op. cit. pp. 335-338; Calfish, L 'Submerged Antiquities and the International Law of the Sea' (1982) 13 *Netherlands Lawbook of International Law* 20; Roach, J A 'Sunken warships and military aircraft' (1996) 20 *Marine Policy* 351; Bederman, D J 'Rethinking the Legal Status of Sunken Warships' (2000) 31 *Ocean Development and International Law* 97; Forrest, C 'An international perspective on Sunken State Vessels as Underwater Cultural Heritage' (2003) 34 *Ocean Development and International Law* 41; Migliorino, L 'The Recovery of Sunken Warships in International Waters' in Vukas, B (ed.) *Essays on the New Law of the Sea*, (1985) Zagreb.

In these circumstances, where the relevant coastal State takes either of these views, the UK has been unable to secure immunity from interference<sup>40</sup>. What is clear is that while the Doctrine of Sovereign Immunity can afford protection to UCH both within the territorial waters of another coastal State and beyond them in international waters, the geo-political reality is that beyond the UK's CS the UK (and other States in a similar situation) is dependent upon the co-operation of other coastal States to enforce the Doctrine and this co-operation is not always forthcoming. Therefore the Doctrine of Sovereign Immunity produces variable results, a successful outcome being conditional upon the co-operation of another coastal State(s).

That there is a lacuna in regulation of activities directed at UCH situated outside territorial waters is beyond dispute. This was not thought to be significant when UNCLOS was negotiated, since the depth at which much of this UCH is situated made the difficulties of locating and accessing it extremely formidable and this alone afforded protection. Sadly, technological evolution has radically changed this. What then is the exact nature of the threat from this greatly enhanced underwater technology now facing UCH located beyond territorial waters, which the UNESCO Convention is designed to counter?

### **The Evolution of Underwater Technology and the Threat Posed by Activities Directed at UCH Located Outside Territorial Waters**

The threats to UCH beyond the 12nm limit are extensive and are divided by UNESCO into three major categories:

1. Environmental Threats ( e.g. marine life/erosion )
2. Activities that may incidentally affect it (e.g. construction/fishing)
3. Activities directed at it (e.g. looting/salvage)

Of these, environmental threats fall outside the scope of the convention. Human threats that may incidentally affect UCH (such as construction or fishing) are best dealt with via decision making structures such as an Environmental Impact Assessment; or by robust policy and management systems such as those applied to fishing and biodiversity, which are important, but not the subject of this paper. This leaves activities directed at UCH.

The key issue with risk to UCH is accessibility, the ability for humans to access it and therefore have a direct impact upon it. This impact can be through positive factors such as scientific investigation and public enjoyment or more negative ones such as commercial exploitation and looting. There have been in excess of 160 major cases worldwide of commercial exploitation of UCH in the last 30 years and incidental looting is very common. Most accessible wrecks are now devoid of small finds. When UNCLOS was negotiated between 1973 and 1982, the depths at which UCH outside territorial waters lies made accessing it extremely formidable, indeed effectively impossible, for anyone but a very few government or scientific organisations. This section briefly explains the development of human ability

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<sup>40</sup> For example, in the case of *HMS Swift*, sunk in the 18<sup>th</sup> century in what are now Argentinian territorial waters. It should be noted that in this case the vessel was the subject of a professional excavation by fully competent national archaeological authorities in complete compliance with the Rules of the Annex to the UNESCO Convention. The relevant point merely being that Argentina takes the view that the vessel, due to lapse of time, does not attract Sovereign Immunity and consequently the consent of the Flag State, the UK, is not required to conduct such professional archaeological investigations.

to access UCH, and demonstrates how that position has changed during the years in which UNCLOS was being negotiated and further deteriorated during 1993 and 2001 when the UNESCO Convention on Underwater Cultural Heritage was being drafted

Throughout history human ability to access to the underwater environment has been very limited. The development of the standard diving dress in the 19<sup>th</sup> century altered this and allowed humans for the first time to spend time on the seabed and achieve considerable salvage feats. An example of this is the work of the Deane Brothers in salvaging the wreck of HMS *Royal George* and incidentally discovering the archaeological wreck of the *Mary Rose* as a by-product of this<sup>41</sup>. Standard dress was improved upon by the development of observation chambers in the early 20<sup>th</sup> century, SCUBA in the mid 20<sup>th</sup> century, deep submergence vehicles and remote operated vehicles in the mid to late part of the 20<sup>th</sup> century. This development has gradually increased the depth to which people can directly access the seabed to depths that were inconceivable a few decades ago, as is shown in Table 1 and the graph below (Fig 1).

It should be borne in mind that the average depth of the deep ocean is around 4,200m, a depth exceeded in the 1980s for salvage operations and that the deepest surveyed point in the oceans, with a depth of 10,911m is the Challenger Deep in the Mariana Trench located in the western Pacific Ocean. This was reached by a manned deep submergence vehicle, the *Trieste* in 1960<sup>42</sup>, and whilst that event has not been repeated Challenger Deep has been dived by unmanned vehicles since.

<b>No</b>	<b>Year</b>	<b>Wreck</b>	<b>Depth</b>	<b>Method</b>	<b>Purpose</b>
1	1902	Antikythera Wreck <sup>43</sup>	60m	Diver	Archaeology
2	1915	USS <i>F-4</i> <sup>44</sup>	93m	Diver	Submarine Salvage
3	1932	SS <i>Egypt</i> <sup>45</sup>	125m	Observation chamber and Grab	Bullion Salvage
4	1966	Palomares incident <sup>46</sup>	880m	Deep Submergence Vehicle	Lost Nuclear Weapon
5	1969	DSV <i>Alvin</i> <sup>47</sup>	1,500m	Deep Submergence Vehicle	Submarine Salvage
6	1985	Air India Flight 182 <sup>48</sup>	2,042m	Remote Operated Vehicle	Air Crash Investigation
7	1987	RMS <i>Titanic</i> <sup>49</sup>	3,810m	Deep Submergence Vehicle	Object Salvage
8	1987	SSA Flight 295 <sup>50</sup>	4,450m	Remote Operated Vehicle	Air Crash Investigation
9	1989	United Airlines Flight 811 <sup>51</sup>	4,572m	Remote Operated Vehicle	Air Crash Investigation
10	1996	MV <i>Rio Grande</i> <sup>52</sup>	5,762m	Remote Operated Vehicle	Study Deepest Wreck

<sup>41</sup> Bevan, J 1996 *The Infernal Diver*

<sup>42</sup> Piccard, P and Dietz R S 1961 *Seven Miles Down The Story of the Bathyscaph Trieste*.

<sup>43</sup> Du Plat Taylor, J 1966 *Marine Archaeology*

<sup>44</sup> Masters, D. 1938 *Divers in Deep Seas*

<sup>45</sup> Scott, D 1932 *The Egypt's Gold*

<sup>46</sup> Lewis, F 1987 *One of Our H-Bombs is Missing*

<sup>47</sup> <http://www.whoi.edu/page.do?pid=10737> Retrieved 1<sup>st</sup> November 2010

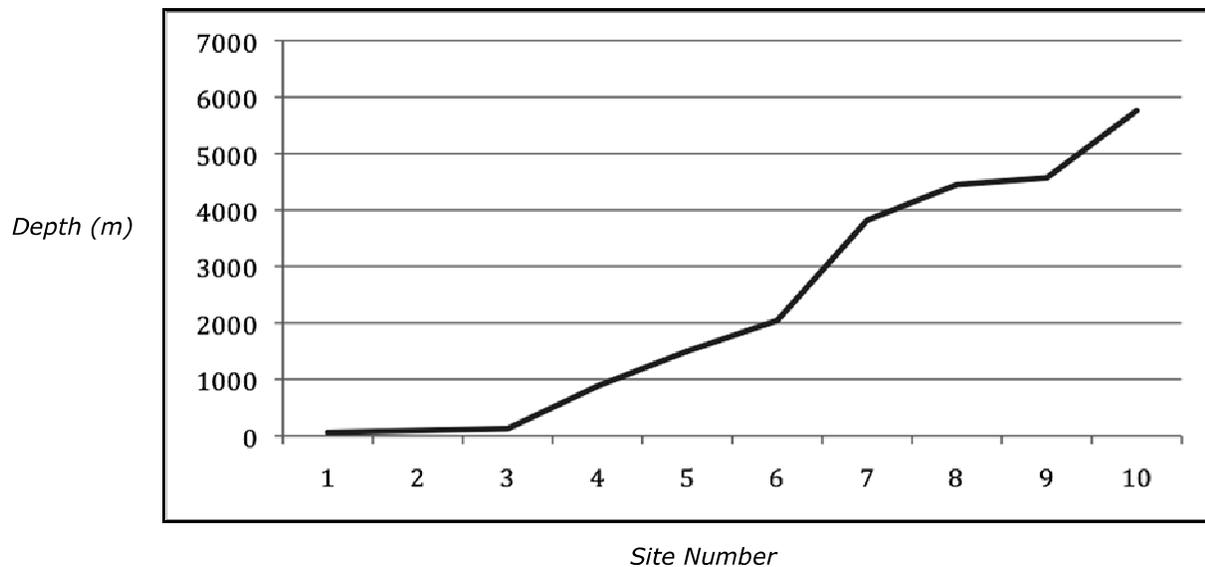
<sup>48</sup> SUBSALV US Navy 1992 *Commercial Aircraft Salvage Operations*

<sup>49</sup> <http://www.rmstitanic.net/index.php4?page=55> Retrieved 1<sup>st</sup> November 2010

<sup>50</sup> SUBSALV US Navy 1992 *Commercial Aircraft Salvage Operations*

<sup>51</sup> SUBSALV US Navy 1992 *Commercial Aircraft Salvage Operations*

<sup>52</sup> <http://www.bluewater.uk.com/achievements.htm> Retrieved 1<sup>st</sup> November 2010



**Figure 1:** Increasing depth of salvage operations

For the first half of the 20<sup>th</sup> century these developments were driven by a number of goals, principally the salvage of valuable recent cargoes, the saving of submariners' lives, the investigation of aircraft and shipping disasters and the development of underwater science. In the 1960s development of the offshore oil and gas industry provided a new driver for the development of deep water technology and the funds with which to do this<sup>53</sup>. By the early 1980s these investments had developed a safe and commercially viable means for accessing shipwrecks in the deep ocean. Indeed a paper published in 1984 in the *Marine Technology Society Journal* explained how the technological challenges surrounding salvage in the deep ocean were on their way to being solved<sup>54</sup> and heralded in the era of deep water shipwreck exploration that began publicly with Dr Robert Ballard's discovery of the RMS *Titanic* in 1986 in 3,810m of water, 450 miles southeast of Newfoundland.

When Ballard found the wreck in 1986 it was a pioneering feat, since only three submersibles could dive this deep at that date. He saw that now found, the greatest threat to the site of the *Titanic* was man and he asked that the site be respected and unmolested<sup>55</sup>. Prior to this discovery little attention had been paid to shipwrecks in the deep ocean beyond that of recently lost nuclear submarines. Ballard's expedition had been part of this activity, being funded by the US military to survey the wrecks of nuclear submarines, the *USS Thresher* and *USS Scorpion*<sup>56</sup>, but his discovery awoke an interest in other deep ocean wrecks<sup>57</sup>. Technology had now reached the point where it was available for commercial hire and this was only a few years after Ballard had made his fears known. Titanic Ventures Limited Partnership (now RMS *Titanic* INC) visited the site and recovered some 1,800 objects<sup>58</sup>.

<sup>53</sup> <http://subsea.ddict.co.uk/index.php> Retrieved 1<sup>st</sup> November 2010

<sup>54</sup> Crothall, A.C. 1993 *Wealth From the Sea*

<sup>55</sup> Ballard, R. 1987 *The Discovery of the Titanic*

<sup>56</sup> [http://www.timesonline.co.uk/tol/news/world/us\\_and\\_americas/article3994955.ece](http://www.timesonline.co.uk/tol/news/world/us_and_americas/article3994955.ece) Retrieved 1<sup>st</sup> November 2010

<sup>57</sup> Ballard, R. 2005 Deep Water Archaeology in *Terra Marique* Pollini, J (ed)

<sup>58</sup> <http://www.rmstitanic.net/index.php4?page=43> Retrieved 1<sup>st</sup> November 2010

<b>Found</b>	<b>Lost</b>	<b>Site</b>	<b>Depth</b>	<b>Reason for Location</b>
1963	1963	USS <i>Thresher</i> (SSN-593) <sup>59</sup>	2,600m	Survey of lost nuclear submarine
1968	1968	K-129 <sup>60</sup>	5,000m	Part of hull recovered by CIA in 1974
1969	1968	USS <i>Scorpion</i> (SSN-589) <sup>61</sup>	3,000m	Survey of lost nuclear submarine
<u>1985</u>	<u>1912</u>	<u>RMS <i>Titanic</i></u> <sup>62</sup>	<u>3,810m</u>	<u>Over 5,500 objects salvaged up to 17 tons</u>
<u>1986</u>	<u>1857</u>	<u>SS <i>Central America</i></u> <sup>63</sup>	<u>2,600m</u>	<u>Bullion salvage, c\$125 million recovered</u>
1988	1986	K 219 <sup>64</sup>	6,000m	Russian survey found missiles missing
1988	c1900	Four masted schooner (?) <sup>65</sup>	5,000m	Found during search for <i>Bismark</i>
1989	1941	<i>Bismarck</i> <sup>66</sup>	4,791m	Location and filming of battleship
1989	1989	K-278 <sup>67</sup>	1,680m	Survey of lost Russian nuclear submarine
<u>1990?</u>	<u>c100</u>	<u>Roman Trading Vessel</u> <sup>68</sup>	<u>2,400m</u>	<u>Found during a search for another site</u>
1990	1977	MV <i>Lucona</i> <sup>69</sup>	4,200m	Insurance fraud and murder investigation
1994	1980	MV <i>Derbyshire</i> <sup>70</sup>	4,210m	Location to establish cause of loss
1995	1944	I-52 <sup>71</sup>	5,180m	Location and filming of lost submarine
1996	1944	MV <i>Rio Grande</i> <sup>72</sup>	5,762m	Deepest Shipwreck Found
<u>1996</u>	<u>1869</u>	<u>SS <i>General Abbattucci</i></u> <sup>73</sup>	<u>2,650m</u>	<u>Commerical salvage of a packet ship</u>
1997	1943	SS <i>Alpherat</i> <sup>74</sup>	3,770m	Deepest cargo salvage, 179 tons of metals
1998	1942	USS <i>Yorktown</i> <sup>75</sup>	5,000m	Location and filming of aircraft carrier
<u>1999</u>	<u>c300BC</u>	<u>Hellenistic Trading Vessel</u> <sup>76</sup>	<u>3,048m</u>	<u>Deepest ancient shipwreck found</u>
1999	1969	INS <i>Dakar</i> <sup>77</sup>	2,900m	Location of lost submarine
1999	1961	<i>Liberty Bell 7</i> <sup>78</sup>	4,500m	Recovery of an early spacecraft
2001	1941	HMS <i>Hood</i> <sup>79</sup>	2,804m	Location and filming of battlecruiser
2002	1941	HMS <i>Ark Royal</i> <sup>80</sup>	1,066m	Location and filming of aircraft carrier
<u>2002</u>	<u>c1815</u>	<u>Mardi Gras Shipwreck</u> <sup>81</sup>	<u>1,220m</u>	<u>Deepwater pipeline survey</u>
2004	2002	<i>Prestige</i> <sup>82</sup>	3,830m	Recovery of oil cargo
2008	1941	HMAS <i>Sydney</i> <sup>83</sup>	2,468m	Location and filming of cruiser
2008	1941	HSK <i>Kormoran</i> <sup>84</sup>	2,580m	Location and filming of cruiser
2008	1943	AHS <i>Centaur</i> <sup>85</sup>	2,060m	Location and filming of hospital ship

<sup>59</sup> Ballard, R 2008 *Archaeological Oceanography*

<sup>60</sup> <http://www.gwu.edu/~nsarchiv/nukevault/ebb305/doc01.pdf>. Retrieved 1<sup>st</sup> January 2011

<sup>61</sup> Ballard, R 2008 *Archaeological Oceanography*

<sup>62</sup> <http://www.rmstitanic.net/index.php4> Retrieved 1<sup>st</sup> November 2010

<sup>63</sup> Kinder, G. 1998 *Ship of Gold in the Deep Blue Sea*

<sup>64</sup> Huchthausen, P; Kurdin, I & White, A.R. 1997 *Hostile Waters*,

<sup>65</sup> Ballard, R 2008 *Archaeological Oceanography*

<sup>66</sup> Ballard, R 2008 *Archaeological Oceanography*

<sup>67</sup> <http://www.globalsecurity.org/military/world/russia/685.htm> Retrieved 1<sup>st</sup> January 2011

<sup>68</sup> <http://www.bluewater.uk.com/gallery.htm> Retrieved 1<sup>st</sup> January 2011

<sup>69</sup> <http://www.bluewater.uk.com/gallery.htm> Retrieved 1<sup>st</sup> November 2010

<sup>70</sup> <http://www.north-country.co.uk/derbyshire.htm> Retrieved 1<sup>st</sup> November 2010

<sup>71</sup> <http://www.nauticos.com/I-52.htm> Retrieved 1<sup>st</sup> January 2011

<sup>72</sup> <http://www.bluewater.uk.com/achievements.htm> Retrieved 1<sup>st</sup> November 2010

<sup>73</sup> [http://www.sonistics.com/smer\\_update\\_ind.php?id=37](http://www.sonistics.com/smer_update_ind.php?id=37) Retrieved 1<sup>st</sup> January 2011

<sup>74</sup> <http://www.bluewater.uk.com/achievements.htm> Retrieved 1<sup>st</sup> November 2010

<sup>75</sup> Ballard, R 2008 *Archaeological Oceanography*

<sup>76</sup> <http://www.nauticos.com/press/02-20-01.htm> Retrieved 1<sup>st</sup> January 2011

<sup>77</sup> <http://www.submarines.dotan.net/dakar/> Retrieved 1<sup>st</sup> November 2010

<sup>78</sup> Madaras, E.I. & Smith, W.L. 1999 *Liberty Bell 7 Recovery Nondestructive Testing* NASA/TM-1999-209824

<sup>79</sup> Mearns, D. 2009 *Hood and Bismark*

<sup>80</sup> <http://news.bbc.co.uk/1/hi/uk/2585887.stm> Retrieved 1<sup>st</sup> November 2010

<sup>81</sup> <http://www.gomr.mms.gov/PDFs/2008/2008-037.pdf> Retrieved 1<sup>st</sup> January 2011

<sup>82</sup> [www.pcs.gr.jp/doc/esymposium/2005/2005\\_Fontolan\\_E.pdf](http://www.pcs.gr.jp/doc/esymposium/2005/2005_Fontolan_E.pdf) Retrieved 1<sup>st</sup> January 2011

<sup>83</sup> Mearns, D. 2009 *The Search for the Sydney*

<sup>84</sup> Mearns, D. 2009 *The Search for the Sydney*

<sup>85</sup> <http://www.couriermail.com.au/news/queensland/shipwreck-hunter-david-mearns-confirms-ship-is-the-centaur/story-e6freoof-1225812236136> Retrieved 1<sup>st</sup> January 2011

Since 1987 RMS *Titanic* INC have mounted seven expeditions to the wreck recovering over 5,500 objects, the largest weighing 17 tons<sup>86</sup>. Prior to the discovery of the *Titanic* the US Navy had used the deep submergence vehicle *Trieste* in the late 1960s to locate and survey the wrecks of the lost nuclear submarines USS *Thresher* and USS *Scorpion* (details in Table 2 above) soon after their loss. As can be seen in Table 2, since the discovery of the *Titanic*, the number of deepwater shipwrecks sites discovered has increased notably as the technology to work in these depths has expanded and become more affordable. This was particularly due to the development of fibre optic cables which allowed humans to stay on the surface and view the seabed below, making the operation not only safer but cheaper<sup>87</sup>. Most of these sites are 20<sup>th</sup> century in date, however around 21% of those listed in Table 2 predate the outbreak of the First World War, found as a by-product of searches for more modern sites or as targets for commercial salvage.

Alongside the development of commercially viable means of accessing wrecks in deep water has come the advance of the depth capability of divers. This advancement has been driven by the same goals as listed above and required a need for divers to operate in depths well beyond the range possible whilst breathing air, 50m being the recommended limit for air diving in the UK. This advance, the development of breathing mixtures other than air, known as mixed gas diving, started prior to the Second World War and was accelerated by the development of the offshore oil industry from the 1960's, which vastly increased the depth to which naval and commercial divers could dive. Perhaps the most famous activity directed at UCH resulting from this development was the salvage by divers, from a depth of 245m, in 1981 of 4,570 kg of gold from the wreck of the cruiser HMS *Edinburgh*, lost in the Barents Sea in 1942<sup>88</sup>.

Mixed gas technology found its way to the recreational diving industry in the late 1980s and has become known as 'technical diving'. Whilst a relatively small number of recreational divers use the technology it has vastly increased the depth to which some recreational divers can reach. In the 1980s 50m was considered a deep dive, but now dives to 150m are not unusual<sup>89</sup>. The deepest technical wreck dive was on the *Milano* at 236m in Lake Maggiore, Italy and the deepest wreck dive in open sea is 205m on the *Yolanda* in the Red Sea<sup>90</sup>.

These developments opened up a new era of shipwreck exploration. Many previously unexplored wrecks, excluded from divers because of the depth of water in which they lie, were first dived in the 1990s /2000s. There is no doubt that a significant driver for some of those involved was the interest in identifying and researching the wrecks concerned and discoveries have been made that are historically important. However it cannot be denied that many of these discoveries have been followed by unsystematic, unscientific recovery of material, as a glance through the recreational diving press of the time confirms. An example of this is the wreck of the RMS *Carpathia*, the Cunard Liner made famous as the *Titanic*'s rescue ship. She was torpedoed in 1917, 150 miles SSW Baltimore in the Republic of Ireland in 156m of water. The wreck was first dived by technical divers in 2007 and since

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<sup>86</sup> <http://www.rmstitanic.net/index.php4?page=55> Retrieved 1<sup>st</sup> November 2010

<sup>87</sup> Ballard, R 2005 Deep Water Archaeology in *Terra Marique* Pollini, J (ed)

<sup>88</sup> Wharton R, 2000 *The Salvage of the Century*

<sup>89</sup> [www.deepimage.co.uk/diving/wreckdiving.htm](http://www.deepimage.co.uk/diving/wreckdiving.htm) Retrieved 1<sup>st</sup> November 2010

<sup>90</sup> [www.divernet.com](http://www.divernet.com) Retrieved 1<sup>st</sup> November 2010

that date nearly 100 objects have been recovered. A dive to these depths at this kind of location, towards the edge of the continental shelf in the western approaches to the English Channel is no small achievement and shows that the seabed in the majority of the UK's EEZ and CS is now accessible to some recreational divers.

### **The Current Situation in the UK's EEZ and CS**

The UK's Maritime & Coastguard Agency's Receiver of Wreck estimates that around 40% of recoveries of shipwreck material reported by recreational divers are from outside UK territorial waters and that these are probably increasing as a percentage of reported recoveries. Many of the divers that regularly report recoveries to the Receiver are enthusiastic wreck researchers driven by the challenge of identifying unknown wrecks and many of these individuals are concerned that commercial salvage of wrecks off the UK coast, but outside territorial waters, is destroying wrecks that they are diving on<sup>91</sup>. These comments are supported by information publicly available on the internet by organisations such as Sub Sea Resources<sup>92</sup> or in the media such as Discovery TV's *Secrets of the Silver Queen* (SS *Laconia*) and *Turning Lead into Gold*, which are TV series episodes of the *Treasure Quest* series<sup>93</sup>.

### **Conclusion**

In conclusion, the following points may be summarised:

- Commercial salvors have a proven capability to work on wrecks in up to 5,273m (3.28 miles) of water
- Archaeological wreck sites have been found in water as deep as 3,048m (1.89 miles)
- Perhaps as many as 21% of shipwreck sites in deep water (1,000m+) predate the First World War
- Dives by recreational divers to 80/90m in UK waters are not uncommon
- A very small number of recreational divers are diving wrecks in depths of up to 150m
- Commercial exploitation of wrecks around the UK, but outside of territorial waters, is not uncommon
- History shows that unregulated access leads to commercial exploitation and looting

The regulatory lacuna, which is an enduring legacy, or some would say failure, of the UNCLOS regime established in 1982, is now permitting very real damage to be inflicted upon the UCH located beyond coastal States' territorial waters. All coastal States need to address this lacuna urgently and to-date the UNESCO Convention is the only internationally negotiated mechanism for so doing.

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<sup>91</sup> Source Receiver of Wreck, Maritime and Coastguard Agency

<sup>92</sup> <http://subsea.ddict.co.uk/index.php> Retrieved 1<sup>st</sup> November 2010

<sup>93</sup> [www.yourdiscovery.com/web/treasure-quest/](http://www.yourdiscovery.com/web/treasure-quest/) Retrieved 1<sup>st</sup> November 2010